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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/665,115

09/22/2003

Yoshinobu Utsumi

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EXAMINER

SCHEUERMANN, DAVID W

ART UNIT

PAPER NUMBER

2834

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

02/22/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/665,115

Applicant(s)

UTSUMI ET AL.

Examiner

David W. Scheuermann

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/23/2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 2,3,5,6,8 and 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,7 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed on 1/23/2007 have been fully considered and are not persuasive. Applicant argues that the limitation, "said rotary shaft itself serves as a magnetic flux interrupting means made of a non-magnetic material," is not satisfied in the Youshinobu, JP 2002084724 (RELYING ON EP 1482625 A1 FOR TRANSLATION) reference. Examiner disagrees. The phrase, "serves as a magnetic flux interrupting means made of non-magnetic material" still leaves open the possibility that the shaft may be wholly or partially made of non-magnetic material. The latter case is clearly met in paragraph 25 of Youshinobu, JP 2002084724 (RELYING ON EP 1482625 A1 FOR TRANSLATION). Paragraph 25 is reproduced, in part, with emphasis below for convenience:

[0025] The first rotatable shaft 12 and the second rotatable shaft 30 are coupled to each other by a coupling 32 which is filled with of bound by a mass of **nonmagnetic** material 33 such as stainless steel.

Thus, material 33 cooperates with the coupling 32 to **serve as a** large magnetic resistance or reluctance portion for **decreasing the magnetic flux leakage** from the first rotatable shaft 12 to the second rotatable shaft 30. Applicant further seems to imply that the entire shaft, "itself" is made of magnetic flux interrupting means or comprises a

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one-piece shaft, however these limitations are not present in the claims. According to § 2111 of the MPEP, claims must be given their broadest reasonable interpretation. A portion of this section is cited below for the practitioner's convenience:

During patent examination, the pending claims must be "given *>their< broadest reasonable interpretation consistent with the specification." >*In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000).< Applicant always has the opportunity to amend the claims during prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969).

It is the examiners position that the shaft of Youshinobu, JP 2002084724 (RELYING ON EP 1482625 A1 FOR TRANSLATION) comprises elements 12, 30, 32 and 33. Since part of the shaft contains non-magnetic material to decrease flux leakage the **shaft as a whole meets the claimed structure**.

As to claim 10, the non-magnetic material 33 interrupts the leakage of flux passing from a rotor to a turning angle detector because non-magnetic material 33 lies between rotor core 8 and turning angle detector 20. The flux is interrupted by the non-magnetic material 33 and does not reach shaft portion 30 with the same intensity as present in shaft portion 12.

For these reason the rejection is proper and is therefor maintained.

Claim Rejections - 35 USC § 102

Claims 1 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Youshinobu, JP 2002084724 (RELYING ON EP 1482625 A1 FOR TRANSLATION). Youshinobu, JP 2002084724 (RELYING ON EP 1482625 A1 FOR TRANSLATION) shows:

An electric rotating machine for a vehicle (see figure 1) comprising: a rotor core 6 that is fitted to a rotary shaft 12; a stator core 3 that is concentric with said rotor core and disposed on the outside of said rotor core; and a turning angle detector 20 that is disposed at one shaft end of said rotary shaft;

said rotary shaft itself serves as a magnetic flux interrupting means made of a non-magnetic material, (see paragraph [0025]) for interrupting leakage flux passing onto said rotary shaft as a result of excitation of a rotor coil 10 wound on said rotor core.

As to claim 10, note that Youshinobu, JP 2002084724 (RELYING ON EP 1482625 A1 FOR TRANSLATION) refers to rotation angle or position detector 20 in the abstract, which is functionally equivalent to a resolver.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Youshinobu, JP 2002084724 (RELYING ON EP 1482625 A1 FOR TRANSLATION) in view of Kitazawa, JP 09065617. Youshinobu, JP 2002084724 (RELYING ON EP 1482625 A1 FOR TRANSLATION) discloses the invention substantially as claimed as set forth in the rejection of claim 1, supra. Youshinobu, JP 2002084724 (RELYING ON EP 1482625 A1 FOR TRANSLATION) does not expressly disclose, "...wherein a high-permeability magnetic bypass member is disposed between said rotor core and said turning angle detector." Kitazawa, JP 09065617 discloses a magnetic bypass member is disposed between said magnetic core and said turning angle detector, for the inherent purpose of improving signal strength by reducing interference. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to place a high-permeability magnetic bypass member between the rotor core, which contains a magnetic core, and the turning angle detector or resolver in Youshinobu, JP 2002084724 (RELYING ON EP 1482625 A1 FOR TRANSLATION). One of ordinary skill in the art would have been motivated to do this improve the signal strength and reduce noise in the resolver by reducing stray magnetic fields.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Youshinobu, JP 2002084724 (RELYING ON EP 1482625 A1 FOR TRANSLATION) in view of Maestre, US 5300884. Youshinobu, JP 2002084724 (RELYING ON EP

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1482625 A1 FOR TRANSLATION) discloses the invention substantially as claimed as set forth in the rejection of claim 1, supra. Youshinobu, JP 2002084724 (RELYING ON EP 1482625 A1 FOR TRANSLATION) does not expressly disclose, "...wherein said turning angle detector is a resolver having corrugations formed on a curved outer surface of said resolver." Maestre, US 5300884 discloses a resolver having corrugations formed on a curved outer surface of said resolver, for the inherent purpose of improving signal strength. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use a resolver having corrugations formed on a curved outer surface of said resolver in the combination of Youshinobu, JP 2002084724 (RELYING ON EP 1482625 A1 FOR TRANSLATION) and Mimura, JP 02099399. One of ordinary skill in the art would have been motivated to do this improve the signal strength and reduce noise.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David W. Scheuermann whose telephone number is 571-272-2035. The examiner can normally be reached on Monday through Friday from 8:00 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached at (571) 272-2044. The fax phone numbers for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



dws

February 17, 2007

